CLMPTO
09/25/01
aa

(original)
1. An artificial vision method, **characterized** by:

generating an image percept vector;

transforming said image percept vector into a feature vector; and

generating a response array by multiplying said feature vector by a trained linkage matrix modeling a percept-response system.

(original)
2. The method of claim 1, **characterized** by said feature vector including the covariance products of said image percept vector.

(original)
3. The method of claim 2, **characterized** by said feature vector including the auto-covariance products of said image percept vector.

(original)
4. The method of claim 3, **characterized** by said feature vector including components of said image percept vector.

--5. (currently Amended) The method of claim 1, **characterized** in that the elements of said linkage matrix are non-negative.

(original)
6. The method of claim 5, **characterized** in that the elements of said linkage matrix are restricted to values between zero and a predetermined positive value.

7. (currently Amended) The method of claim 1, **characterized** by forming a coupled feacure vector by coupling said feature vector to a response array, represented by a vector, using a Kronecker product before performing said matrix multiplication.

currently
8. (Amended) The method of claim 1, **characterized** by forming a coupled feature vector by coupling said feature vector to several response arrays, represented by vectors, using repeated Kronecker products before performing said matrix multiplication.

currently
9. (Amended) The method of claim 1, **characterized** by said response array being a coupled response vector formed by two response vectors coupled to each other by a Kronecker product.

currently
10. (Amended) The method of claim 1, **characterized** by said response array being a coupled response matrix formed by two response vectors coupled to each other by an outer product.

currently
11. (Amended) The method of claim 1, **characterized** by said linkage matrix being a coupled linkage matrix formed by weighting a set of uncoupled linkage matrices with the elements of another response vector.

currently
12. (Amended) The method of claim 1, **characterized** by converting each response vector into a corresponding scalar response signal.

currently
13. (Amended) The method of claim 1, **characterized** by discarding linkage matrix elements below a predefined threshold.

currently
14. (Amended) The method of claim 1, **characterized** by said percept vector being sparse, each non-zero percept vector element giving a continuous representation limited in definition range with respect to some variable property of an object in an image.

currently
15. (Amended) The method of claim 1, **characterized** by said percept vector being sparse, each non-zero percept vector element giving a continuous representation, limited in spatial range, of the position an object in an image.

(original)
16. An artificial vision system, **characterized** by:

means (12, 14) for generating an image percept vector;

means (16) for transforming said image percept vector into a feature vector; and

means (16) for generating a response array by multiplying said feature vector by a trained linkage matrix modeling a percept-response system.

(original)
17. The system of claim 16, **characterized** by means (18, 20) for training said linkage matrix.

(original)
18. A percept-response system for sensing and control, **characterized** by:

means (12, 14) for generating a percept vector;

means (16) for transforming said percept vector into a feature vector; and

means (16) for generating a response array by multiplying said feature vector by a trained linkage matrix modeling said percept-response system.

(original)
19. The system of claim 18, **characterized** by means (18, 20) for training said linkage matrix.